

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE J		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 0006		3. EFFECTIVE DATE 18-Jul-2003		4. REQUISITION/PURCHASE REQ. NO. W68MD9-3112-0001		5. PROJECT NO.(If applicable)	
6. ISSUED BY USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT P.O. BOX 3755 SEATTLE WA 98124-3755		CODE DACA67		7. ADMINISTERED BY (If other than item 6) See Item 6		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				<input checked="" type="checkbox"/> X		9A. AMENDMENT OF SOLICITATION NO. DACA67-03-R-0217	
				<input checked="" type="checkbox"/> X		9B. DATED (SEE ITEM 11) 12-May-2003	
						10A. MOD. OF CONTRACT/ORDER NO.	
						10B. DATED (SEE ITEM 13)	
CODE		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> X The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> X is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>0</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) 8(a) Competitive MATOC Construction Contract WA, OR, ID and MT -- See Continuation							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				TEL: EMAIL:			
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)		16C. DATE SIGNED 18-Jul-2003	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

CONTINUATION

- A. This amendment provides for the following revisions to the solicitation:
1. Contractor Questions and Answers are added for informational purposes.
 2. Volume II is revised as follows:
 - a. The Final Geotechnical Report is added.
 - b. The Native Seed Mix is added.
 - c. Add Construction Note 5 as follows to Drawing Sheet E101: Contractor shall select fasteners and attachment methods for light fixtures and conduit installation to avoid damage to pre-cast pipe reinforcing bars.
- B. The revised attached pages supersede pages of the same number and should be inserted in numerical sequence. New pages should be inserted in numerical sequence. All changes are generally identified, for your convenience, either by strikeout for deletions and underlining of text for additions or single dark line in the margin. All portions of the revised or new pages shall apply to this contract whether or not changes have been indicated.
- C. Offerors must acknowledge receipt of this amendment by number and date on the Standard Form 1442 BACK (page 00010-2) in Block 19 or by telegram.

Enclosures:

Contractor Questions and Answers

Revised Volume II:

Seed Project – Final Geotechnical Report

Seed Project – Native Seed Mix

CONTRACTOR QUESTIONS AND ANSWERS
SOLICITATION DACA67-03-R-0217

1. Building #15, Sheet A102 - 2nd floor plan, note @ wood stair refers to Detail 13/A510. No detail provided.

In response to Question #1 - The stair detail can be found on S201, detail 9.

2. On Sheet C005, legend refers to gravel road. What is the profile of this road?

In reference to question #2, the roadway profile for Station 2 is the same profile as detail A/G003 for the access roads. This consists of 10" min of crushed rock (max size 4"), and 6" min compacted subgrade. Also reference 02731G and 02317G in the specifications for additional detail on gradation, subgrade, etc.

3. Assembly Shelter S107 shows ridge one direction A302 shows ridge going other direction. Which is correct?

Response to Question #3 - The ridge should be as shown on the structural sheet S107.

4. Station #4 Finish Floor elevation is 2558.50'. The existing grade is at an average of 2558.00'. The Finish Grade is shown to be at F.F. -3'-0" or 2555.50'. This becomes a 2.5' cut. To drain the area will require a large area to be disturbed and revegetated plus additional excavation. Is this the intent of the design?

Response: The FF elevation is 3' above the finished grade (as shown on A303) instead of .5' as noted on the C003. There is no intent for a 2.5' cut around the building. The grading plan shown for Station 4 is correct. Change the FF elevation to 2561' on C003.

5. I'm in need of the finish grades and elevations on the manholes shown on sheet C005. Also, would a 72" manhole be an acceptable alternate for the 84" manholes? The 48" pipeline would fit fine in the 72" structure.

Response: If 84" manholes are not available, provide 96" manholes. The invert elevations are on sheet C006. Here are the rim elevations on the manholes:

**MH #1 - 2499.93
MH #2 - 2504.53
BC #3 - 2509.63
MH #4 - 2512.73
MH #5 - 2517.23
MH #6 - 2507.13
MH #7 - 2506.63
MH #8 - 2508.33
MH #9 - 2511.58**

6. Architectural plan A102 addresses buildings 1 - 14, the basement plan and building 15. There is no reference to buildings 16 - 17 - 18, where are they referenced and where are the corresponding floor plans, elevations & construction details?

Response: Buildings 16, 17 and 18 are single story buildings following floor plan shown on 1/A102.

7. Architectural plan A102 references buildings 1 - 14 as single story, Structural plan S103 calls out buildings 2 - 4 - 6 & 13 as 2 stories Façade, which is correct?

Response: See sheet C006 plan for key showing location of 2 story façades, which correspond to buildings 2, 3, 4, 6 and 13 on S103. These buildings do not have a second floor; the exterior wall extends up on sides indicated to form a false two-story front. Remaining walls on these buildings are single story height.

8. It is assumed that 0001, Operations Storage Building is the same as the maintenance building on A302. Is this a correct assumption?

Response: Yes.

9. No detail has been given for the Double Restroom Vault Latrine. Please provide this information.

Response: See specification section 13290, for description of vault toilet.

10. Can we use a 132" manhole in lieu of the square basin they show on the plans?

Response: No, a square vault of the dimensions indicated shall be provided.

11. If they want something square it would have to be CIP? The 132" manhole provides the same internal area but we don't know if this has any significance in this application.

Response: A pre-cast vault shall be provided.

12. For sole source pricing, which R.S. Means books will be available for use in pricing? Facilities, mechanical, electrical, or all R.S. Means books?

Response: Use the most recent of the R.S. Means books that apply to that particular task order.

13. Is Division 01 of the R.S. Means book available for use?

Response: Use the most recent of the R.S. Means books that apply.

14. We understand that the closest City Cost Index of where the work is to be performed is to be used. Is this correct?

Response: Yes, Construction Cost Index will be used for options.

15. In regards to sole source coefficient and the use of R.S. Means line items, are the contractors to use the "bare cost" column or the "O&P" column for pricing the items?

Response: Bare cost

16. Is the City Cost Index to be used?

Response: Yes, Construction Cost Index will be used for options.

17. Does all the material on this project need to be American made? (Can the concrete pipe be made and delivered from Canada?)

Response: More specific information is needed in order to provide a determination. However, refer to FAR clauses 52.225-9, 52.225-10, and 52.225-11 in the solicitation for details.

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URBAN ASSAULT COURSE
YAKIMA TRAINING CENTER,
YAKIMA, WASHINGTON

PROJECT NO. 57654

FINAL
GEOTECHNICAL REPORT

11 APRIL 2003

PREPARED BY

CIVIL/SOILS SECTION, DESIGN BRANCH
SEATTLE DISTRICT, U.S. ARMY CORPS OF ENGINEERS

Urban Assault Course
Yakima Training Center,
Yakima, Washington
PN 57654

1. General. This project consists of constructing a new Urban Assault Course facility at Yakima Training Center. Primary facilities include the following: individual and team technique trainer; squad and platoon technique trainer and underground trainer; granadier trainer; and urban offense/defense trainer. Other features include gravel access road and parking, generator pad, and latrines.

2. Subsurface Exploration. Subsurface exploration was conducted on 6 March 2003 by the Seattle District, U. S. Army Corps of Engineers. Eight exploration test holes (03-BH-04 through 03-BH-11) were dug to depths ranging from 2.5 feet (0.76 meters) to 8 feet (2.4 meters) using a John Deere backhoe, Model JD 410D. Exploration logs and locations of exploration are shown on Drawing number 24s/179-60-01, plates GT-1 and GT-2. Exploration test holes were visually classified according to the "Unified Soils Classification System."

3. Site Conditions.

a. Regional Geology. The Yakima Firing Center lies near the western margin of the Columbia Plateau, west of the Columbia River and within the Yakima fold belt. The terrain is dominated by a series of generally northwest-southeast trending anticlinal ridges and synclinal valleys of the Yakima fold belt. Elevation differences from major ridges to adjacent valleys commonly range from 500 feet (150 meters) to 1000 feet (300 meters). Surfaces are generally dissected. Limited areas of gentle slopes and broad areas of rolling to steep slopes rise toward ridge crests. The easterly two-thirds of the YFC drains to the Columbia River, with the westerly one-third draining to the Yakima River. A thick sequence of the Columbia River Basalt Group (Yakima Basalts of Miocene age) underlies the area with post basalt sedimentary deposits associated with the synclinal valley areas. The character of the basalt varies considerably, being massive vesicular, columnar, palagonitic, and brecciated. Minor interbeds of silt, sands, and diatomite are associated with the basalts. Where bedrock is not exposed on ridges or steeper slopes, the surface is generally covered by a varying thickness of windblown silt. In the flatter slopes and less active drainages, a silty gravel, sometimes cemented with caliche, lies beneath the surface silts. Silts and silty sandy gravels are generally found in the valley areas, including locally extensive deposits of diatomite.

b. Site Geology and Foundation Conditions. The site is overlain by soft to medium sandy silts, silty sands, and silty sandy gravels. These surficial soils overlie fractured bedrock with a matrix of silt and sand. The depth of the surficial soils range from about 1.5 feet (0.45 meters) to greater than 8 feet (2.4 meters) overlying the fractured bedrock. Bedrock was encountered at depths ranging about from 1.5 feet (0.45 meters) to greater than 8 feet (2.4 meters). The surficial soils are of mixed colluvial(slope wash), residual (generated in place by weathering) and eolian origin. The underlying silts and gravels are generally of residual origin formed as the underlying basalt breaks down. The sandy gravelly silts or sandy silty gravels are often locally lightly cemented with a calcium

carbonate (caliche). The bedrock is moderately to highly weathered basalt, often vesicular. The effects of weathering include oxidation, softening, and secondary mineralization. Groundwater was not encountered in any of the exploration holes for the dates and locations indicated on the exploration logs and plans.

c. Earthquake History. Reference: Draft TI 809-04/AFMAN 32-1149 V1 (I), "Seismic Design for Buildings", dated May 1998. For all structures located within those regions of the Maximum Considered Earthquake (MCE) maps having values of short period spectral accelerations, S_s , greater than 0.15 g or values of the one second period spectral acceleration, S_1 , greater than 0.04 g, the site shall be classified according to TI 809-04, Table 3-1, Site Classification. From the MCE maps, the values of S_s and S_1 are 0.5g and 0.16g, respectively for Yakima Training Center, Washington. Criteria to determine the site classification from Table 3-1 include type of soils, depths of soil layers, average SPT "N" values for the top 100 feet of materials, average shear wave velocities for the top 100 feet of materials, and the average undrained shear strength for the top 100 feet soils.

Limited laboratory and field test data exist in this area of the base, therefore from Table 3-1, use Site Class D for design.

d. Environmental History. During subsurface exploration, no olfactory or visual evidence of soils contamination was observed at this site. If any suspected hazardous material is found during the performance of this job, all work will stop and the Corps of Engineers inspector and the Base Environmental Office will be notified immediately.

4. Recommended Foundation Design.

a. Frost Depth. In accordance with TM 5-809-1, dated 28 March 1986, exterior footings shall be placed a minimum of 34 inches (865 mm) inches below finished grade for heated structures and 42 inches (1066 mm) below finished grade for unheated structures for frost protection.

b. Bearing Capacity. The fine grained surficial soils will tend to be unstable during construction in inclement weather. We therefore recommend overexcavation of one foot (300 mm) in both depth and width below the footings and replacement with select granular fill. This will provide a stabilized working surface and will distribute loads to permit a working allowable bearing capacity of 2000 pounds per square foot (96 kilopascals (Kpa) dead plus live load, with one-third overstress allowed for temporary loads. This value is based on Terzaghi bearing capacity factors and experience and is recommended for foundations on overburden. The select granular fill shall meet the following gradation:

Sieve Size	Percent Passing by Weight
3 inch(75 mm)	100
No. 4 sieve(4.75 mm)	35-70
No. 200 sieve(0.075 mm)	0-15

Granular fill shall be compacted to 95 percent of maximum modified Proctor density.

Footings on the shallow, jointed rock shall be designed for an allowable bearing capacity of 8000 pounds per square foot (383 Kpa) dead plus live load with one-third over stress allowed for temporary dynamic loads. All footings shall be placed either uniformly on rock or uniformly on overburden.

c. Footings and Slabs. Except as otherwise specifically approved, slabs-on-grade shall not bear directly on footings or pedestals and shall not be tied to footings or pedestals. A capillary water barrier and vapor barrier (as required) shall be provided under the floor slab consisting of a minimum of 150 mm of free draining granular material covered by an impermeable membrane. This will also serve as a cushion where the slab passes over footings or grade beams. The design of heavy loads on floor slabs shall be performed according to TM 5-809-12. Use a modulus of subgrade reaction, "K" of 75 pounds per square inch per inch and use concrete with flexural strength of 600 pounds per square inch at 28 days age.

d. Backfill Properties. Use assumed soil properties of $\phi = 25$ degrees, $c = 0$, and moist unit weight = 125 pounds per cubic foot (2000 kilograms per cubic meter) for native soil backfill. For granular backfill materials, the parameters to be used are $\phi = 35$ degrees, $c = 0$, and moist unit weight = 130 pounds per cubic foot (2082 kilograms per cubic meter).

e. Earth Pressure Coefficients. For the native soils, the theoretical earth pressure coefficients for active (K_a), at rest (K_o), and passive (K_p) conditions are 0.41, 0.57, and 2.46, respectively. For granular backfill materials, the theoretical earth pressure coefficients for active (K_a), at rest (K_o), and passive (K_p) conditions are 0.27, 0.42, and 3.69, respectively. These coefficients are valid only for frictionless, vertical walls with horizontal backfill. For walls designed for other conditions, appropriate revisions of these coefficients must be made. Wall movements of at least $0.005H$ (H = wall height) are required to reduce wall pressures to active condition. Very stiff or internally braced walls for which movements less than $0.005H$ are anticipated should be designed for K_o condition or appropriate braced cut criteria. For passive conditions, a relatively large movement is required to develop full passive earth pressure. For this reason, $K_p = 2.0$ is recommended for general design use. For static conditions, all walls should have a safety factor of at least 2.0.

f. Underground Utilities.

(1) Frost Protection. All frost susceptible utility lines shall be placed with top of pipe at least 42 inches (1066 mm) below ground surface for frost protection.

(2) Corrosion Protection. No laboratory or field resistivity tests have been conducted to determine the corrosion activity. Since the soils at the site are generally fine sands and silts, mild to moderate corrosivity should be anticipated.

(3) Heat Distribution System. Not applicable, this site shall not use high temperature hot water as a heat source.

5. Recommended Construction and Drainage Considerations.

a. Grades of at least 1 percent and preferably 5 percent, to promote drainage of water away from the structure, shall be provided around the perimeter of the structure.

b. Runoff from roofs shall be directed away from the structure by downspouts and storm drains or surface channels.

c. Walks and pavements adjacent to the structure shall be positively sloped away from the structure.

d. The site shall be prepared to avoid ponding of water in low areas. Sumps and pumps shall be provided at the bottom of excavations, if necessary, to remove rainwater or surface drainage which has entered the excavation.

6. Recommendations for Pavement Design. Pavements for this facility will accommodate various wheeled vehicles. All access roads and parking areas shall be gravel. In order to insure that the frost design is adequate for conventional loading, two methods of pavement design were performed and evaluated; these are the conventional design method and the reduced subgrade strength method.

NOTE: The pavement design manual, TM 5-822-5 and TM 5-822-12 are not in a metric format. Therefore, design thicknesses will be calculated using non-SI units and then the sections will be converted to metric units.

a. Gravel-Surfaced Roads and Parking Areas For Non-Tracked Vehicles. The assumptions, procedures, and design for each method are as follows:

(1) Conventional Design Method (Nonfrost Design).

(a) Category III traffic.

(b) Class G Road (<70 vehicles per day)

(c) Subgrade - CBR 10

(d) Base - CBR 80

From TM 5-822-12 (Table 2, Design Index for Pneumatic-tired Vehicles), a design index of 1 is obtained for a Category III traffic and Class G road. From Figure 1, for a subgrade CBR of 10 and design index of 1, the total pavement section thickness required is 3.25 inches. Pavement section would, therefore, consist of 4 inches of wearing course.

(2) Reduced Subgrade Strength Method (Frost Design).

(a) Category III traffic.

(b) Class G Road (<70 vehicles per day)

(c) Subgrade frost area soil support index of 3.5 for F-3 soils.

(d) Subbase - CBR 40 (nonfrost susceptible (NFS))

(e) Base - CBR 80 (NFS)

From TM 5-822-12 (Table 2, Design Index for pneumatic-tired vehicles), a design index of 1 is obtained for a Category III traffic and Class G road. From Figure 1, for a subgrade frost area soil support index of 3.5 and design index of 1, the total pavement section thickness required is 6.8 inches. The pavement section shall consist of 4 inches of wearing course and 4 inches of NFS base course. This pavement section is recommended for design. The pavement section shall consist of 100 mm of wearing course and 100 mm of NFS base course.

b. Recommended Pavement Sections. The reduced subgrade strength pavement section is recommended for use. The conventional pavement section was not selected because it does not have the adequate thickness to sufficiently control or reduce the effects of frost action. The limited subgrade frost penetration method which is directed specifically to the control of pavement distortion caused by frost heave was also not used. It requires a significant thickness of pavement, base, and subbase to limit the penetration of frost into the frost-susceptible subgrade. Prevention of frost penetration into the subgrade is nearly always uneconomical and unnecessary and will not be used to design pavements to serve motor vehicle traffic except when approved by Headquarters, U.S. Army. The reduced subgrade strength method used for pavement design does not seek to limit the penetration of frost into the subgrade, but determines the thickness of pavement, base, and subbase that will adequately carry traffic loads over the design period of years, which includes one or more periods during which the subgrade supporting capacity is sharply reduced by frost melting.

c. The base course and wearing course shall be compacted to at least 100 percent of the maximum modified Proctor density. Base course shall be NFS having not more than 5 percent passing the 0.075 mm sieve and not more than 3 percent finer than 0.02 mm size. The top 150 mm of the subgrade shall be compacted to at least 90 percent of the maximum modified Proctor density for cohesive soils and 95 percent of maximum modified Proctor density for cohesionless soils.

d. PCC Pad. This pavement is designed in accordance with paragraph 12-6, TM 5-822-5. The pavement section shall be 4 inches (100 mm) of PCC on 4 inches (100 mm) of base course. The base course shall be of 1 inch (25 mm) maximum size and compacted to at least 95 percent of the maximum modified Proctor density. The top 6 inches (150 mm) of the subgrade shall be compacted to 90 percent of the maximum density. Compressive strength shall be 3500 pounds per square inch (24.1 megapascals (MPa)) at 28 days.

7. Borrow Areas. No borrow areas are available on the base. The Contractor shall obtain borrow materials from sources outside the limits of Government-controlled land.

8. Disposal Areas. No disposal areas are available on the base. The Contractor shall dispose of all materials off base.

9. Preparation of Plans and Specifications. The guide specifications listed below shall be used as the basis for preparation of technical sections of the specifications. Full consideration shall be given to notes at the end of these specifications in marking and altering the wording of the requirements to

conform to conditions of this particular project. The technical manuals referenced below shall also be reviewed for information relative to preparation of plans and specifications.

a. Guide Specifications.

- (1) 02230, Clearing and Grubbing.
- (2) 02300, Earthwork.
- (3) 02315, Excavation, Filling, and Backfilling for Buildings.
- (4) 02316, Excavation, Trenching, and Backfilling for Utilities Systems.
- (5) 02722, Aggregate and/or Graded-Crushed Aggregate Base Courses.
- (6) 02713, Aggregate Surface Course.
- (7) 03307, Concrete

b. References.

- (1) TM 5-742, Concrete and Masonry.
- (2) TM 5-805-1, Standard Practice for Concrete for Military Structures.
- (3) TM 5-809-1/AFM 88-3, Chap. 1, Load Assumptions for Buildings.
- (4) TM 5-809-2/AFM 88-3, Chapter 2, Concrete and Structural Design for Buildings.
- (5) TM 5-809-3/AFM 88-3, Masonry Structural Design for Buildings.
- (6) TI 809-04/AFMAN 32-1149 V1 (I), Seismic Design for Buildings, May 1998.
- (7) TM 5-809-12/AFM 88-3, Chapter 15, Concrete Floor Slabs on Grade Subjected to Heavy Loads.
- (8) TM 5-813-1/AFM 88-10, Chapter 5, Water Distribution Systems.
- (9) TM 5-814-1/AFM 88-11, Chapter 1, Sanitary and Industrial Waste Sewers.
- (10) TM 5-818-1, Procedures for Foundation Design of Buildings and Other Structures (Except Hydraulic Structures).
- (11) TM 5-822-2/AFM 88-7, Chapter 5, General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas.
- (12) TM 5-822-5/AFM 88-7, Chapter 1, Pavement Design for Roads, Streets, Walks,

and Open Storage Areas.

(13) TM 5-822-12, Design of Aggregate Surfaced Roads and Airfields, September 1990.

Native Seed Mix

Common Name	Scientific Name	USDA Code	Percent of Mixture	Application Rate (lb/acre)
Western Yarrow	<i>Achillea millifolium</i>	ACMI2	10.15	0.5
Nezpar Indian Rice Grass	<i>Achnatherum hymenoides</i>	ACHY	10.18	2
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	ELEL	6.72	1
Sickle Keeled Lupine	<i>Lupinus albicaulis</i>	LUAL3	3.55	1.5
Sherman Big Bluegrass	<i>Poa ampla</i>	POAM	3.31	3
Canbar Canby Bluegrass	<i>Poa secunda canbyi</i>	POSE	5.01	2
Beardless Wheatgrass	<i>Pseudorogeneria spicata</i>	PSSPI	21.99	3
Secar Bluebunch Wheatgrass	<i>Pseudorogeneria spicata</i>	PSSPS	29.93	4
Needle and Thread Grass	<i>Stipa Comata</i>	STCO	5.82	0.25